

CLAIMS

1. A polymerizable composition for producing an optical member for 850 nm wavelength comprising:

a polymerizable monomer composition,

a polymerization initiator, and

a compound, having a different refractive index from that of the polymerizable monomer composition, whose structure has a benzene ring substituted by a substituent having a Hammett value of not greater than 0.04 or by plural substituents having an average value of Hammett values thereof of not greater than 0.04.

2. The polymerizable composition of claim 1, wherein the polymerizable monomer composition comprises at least one selected from the group consisting of esters of a propenoic acid and esters of derivatives thereof in a major proportion.

3. The polymerizable composition of claim 2, wherein the polymerizable monomer composition comprises at least one selected from the group consisting of esters of a (meth)acrylic acid and esters of derivatives thereof in a major proportion.

4. The polymerizable composition of claim 1, wherein the polymerizable monomer composition comprises at least one selected from the group consisting of compounds including a C-F bond.

5. The polymerizable composition of claim 1, wherein the polymerizable monomer composition comprises at least one

selected from the group consisting of compounds including a C-D (deuterium) bond.

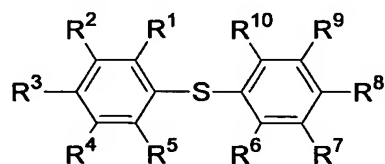
6. An optical member produced by polymerization of a composition of claim 1, so as to form a region having a graded refractive index.

7. An optical member for 850 nm wavelength comprises:
a polymer composition comprising at least one polymer selected from the group consisting of (meth)acrylates base polymers and

a compound having a different refractive index from that of the polymer composition wherein the compound has an absorption peak attributed to a fourth overtone of C-H bond stretching vibration in a benzene ring at not shorter than 875 nm.

8. The optical member of claim 7 wherein the compound is selected from the group consisting of:

Formula (1)



wherein R¹ to R¹⁰ respectively represent a hydrogen, an alkyl, an alkenyl, an alkyloxy, an alkenyloxy, or dialkylamino provided that at least four of them represent an alkyl, alkenyl, alkyloxy, alkenyloxy or dialkylamino.

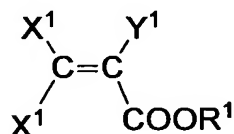
9. The optical member of claim 7, which comprises a region having a graded refractive index.

10. The optical member of claim 9, which comprises a region having a graded refractive index along the direction from the center to the outside.

11. A polymerizable composition for producing an optical member comprising:

a polymerizable monomer composition comprising at least one selected from the group consisting of:

Formula (2)



wherein X^1 is hydrogen (H) or deuterium (D) wherein two X^1 may be same or different; Y^1 represents H, D, CH_3 or CD_3 ; and R^1 represents a C_{7-20} alicyclic hydrocarbon group;

a polymerization initiator, and

a compound, having a different refractive index from that of the polymerizable monomer composition and having a solubility parameter of not greater than 10.9, whose structure has a benzene ring substituted by a substituent having a Hammett value of not greater than 0.04 or by groups having an average value of Hammett values thereof of not greater than 0.04.

12. The polymerizable composition of claim 11 wherein the polymerizable monomer composition comprises an alicyclic hydrocarbon methyl methacrylate and methyl methacrylate in a major proportion.

13. The polymerizable composition of claim 12 wherein the polymerizable monomer composition comprises at least one compound including a C-D bond.

14. An optical member produced by polymerization of a composition of claim 11, so as to form a region having a graded refractive index.

15. The optical member of claim 14 comprising a core region having a graded refractive index, which is produced by polymerization of a composition of claim 11 and a clad region cladding the core region.

16. The optical member of claim 15, wherein the core region having a graded refractive index along the direction from the center to the outside.

17. The optical member of claim 15, wherein the clad region is essentially formed of a polymerizable monomer composition comprising a same ingredient or same ingredients in a major portion as those of the core region.

18. The optical member of claim 15 which is an optical fiber, a light guide or an optical lens.

19. A process for producing an optical member comprising a step of polymerizing the polymerizable composition of claim 1.

20. The process of claim 19, wherein, in said step of polymerizing, the polymerization temperature is 50 degrees Celsius or above.